MCI Communications
Corporation

MCI

1801 Pennsylvania Avenue, NW
Washington, DC 20006

ORIGINAL

EX PARTE

EX PARTE OR LATE FILED

January 21, 1999

Magalie Roman Salas, Secretary
Federal Communications Commission
1919 M Street, N.W., Room 222
Washington, D.C. 20554

Re: Ex Parte Submission
Federal-State Joint Board on Universal Service; CC Docket No. 96-45
Forward-Looking Mechanism for High Cost Support for Non-Rural LECs; CC Docket No. 97-160

Dear Ms. Salas:

On January 20, 1999, AT&T and MCI WorldCom met with Craig Brown, Bryan Clopton, Abdel Eqab, Katie King, Bob Loube, Bill Sharkey, Richard Smith, and Adrian Wright of the Common Carrier Bureau on the staff's examination of the cost of Serving Area Interfaces (SAIs) and Digital Loop Carrier (DLC), and on issues regarding the development and use of expense to investment (E:I) ratios for switching and shared outside plant. AT&T and MCI WorldCom were represented by Richard Clarke and Mike Lieberman of AT&T, Chris Frentrup of MCI WorldCom, and John Donovan and Vincent Candido of Telecom Visions, Inc. The attached handouts served as the basis of the discussion.

First, we described how the default input cost of an SAI was developed for the HAI model. The attached handout shows how an efficiently designed indoor SAI would be engineered, and gives the cost of both the materials and labor required for its construction. A comparison is provided between this development of efficient SAI costs and a cost breakdown that had been provided previously by Sprint, which suggested SAI costs greatly in excess of what is assumed in both the HAI and BCPM models.

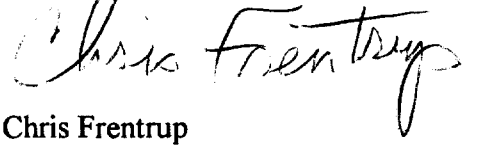
As part of this discussion of efficient SAI engineering, Mr. Candido provided a hands-on demonstration of how splices are performed in the construction of an SAI, and stated that, in his experience, local exchange carrier (LEC) splicing technicians had to achieve splicing rates of 300 pair per hour in order to be certified as splicers, and that experienced splicers typically achieved rates substantially in excess of that level. A letter

from AMP Corporation confirming these speed estimates is attached. In the development of the HAI default SAI costs, we assumed a splicing rate of 300 pair per hour.

Second, Mr. Donovan provided a detailed breakout of the individual components (and their approximate costs) included in the HAI Model's engineering of high- and low-density DLCs. In particular, the HAI Model's inclusion of a complete set of central office terminal equipment required to support the DLC was highlighted. Mr. Donovan also demonstrated the correspondence between his breakout of high-density DLC components and costs into the Staff's template for these DLC components and costs.

Finally, we noted that use of raw ARMIS data to develop E:I ratios might lead to overstated expenses. Specifically, at a minimum expenses for switch software used to enable services beyond those intended to be supported by universal service subsidies must be removed from embedded expense values to develop proper forward-looking switch E:I ratios. In addition, either rental expense paid by LECs must be removed from their embedded ARMIS expense values, or these expense values must be reduced by the rental revenues received by the LEC to develop proper forward-looking pole maintenance E:I ratios.

Respectfully submitted,



Chris Frentrup
Senior Economist
MCI WorldCom
1801 Pennsylvania Ave., NW
Washington, DC 20006
(202) 887-2731

cc: Letter only - Craig Brown, Bryan Clopton, Abdel Eqab, Katie King, Bob Loube, Bill Sharkey, Richard Smith, Adrian Wright

Agenda

Meeting Between HAI Model Sponsors and FCC Staff

January 20, 1999

1. SAI Costs

- Efficient engineering of SAIs
- Cost of splices/demonstration
- Costs of protectors
- Reconciliation between Sprint costs, BCPM costs, and efficient HAI costs

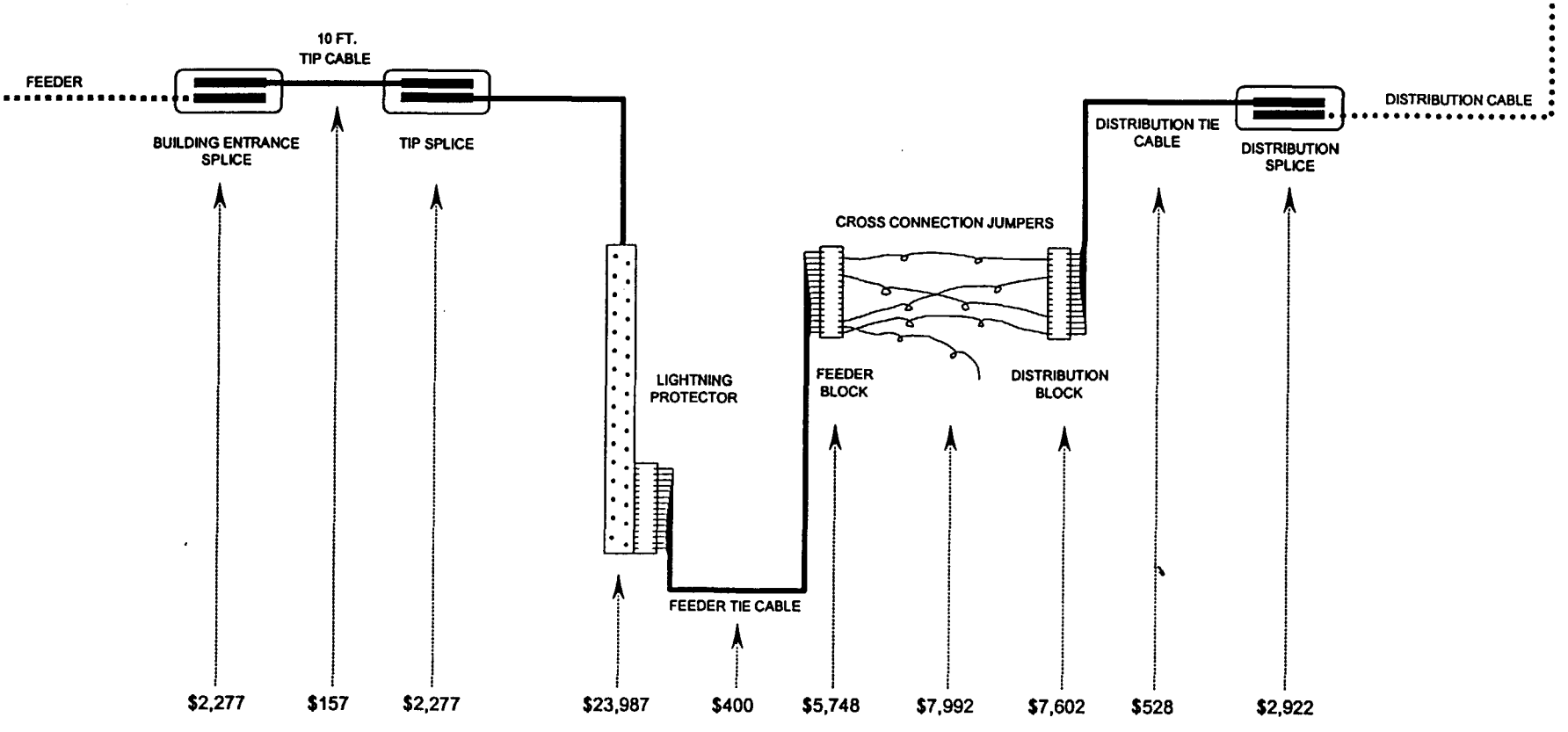
2. DLC Costs

- Breakout of component costs
- Demonstration of COT costs

3. Expenses

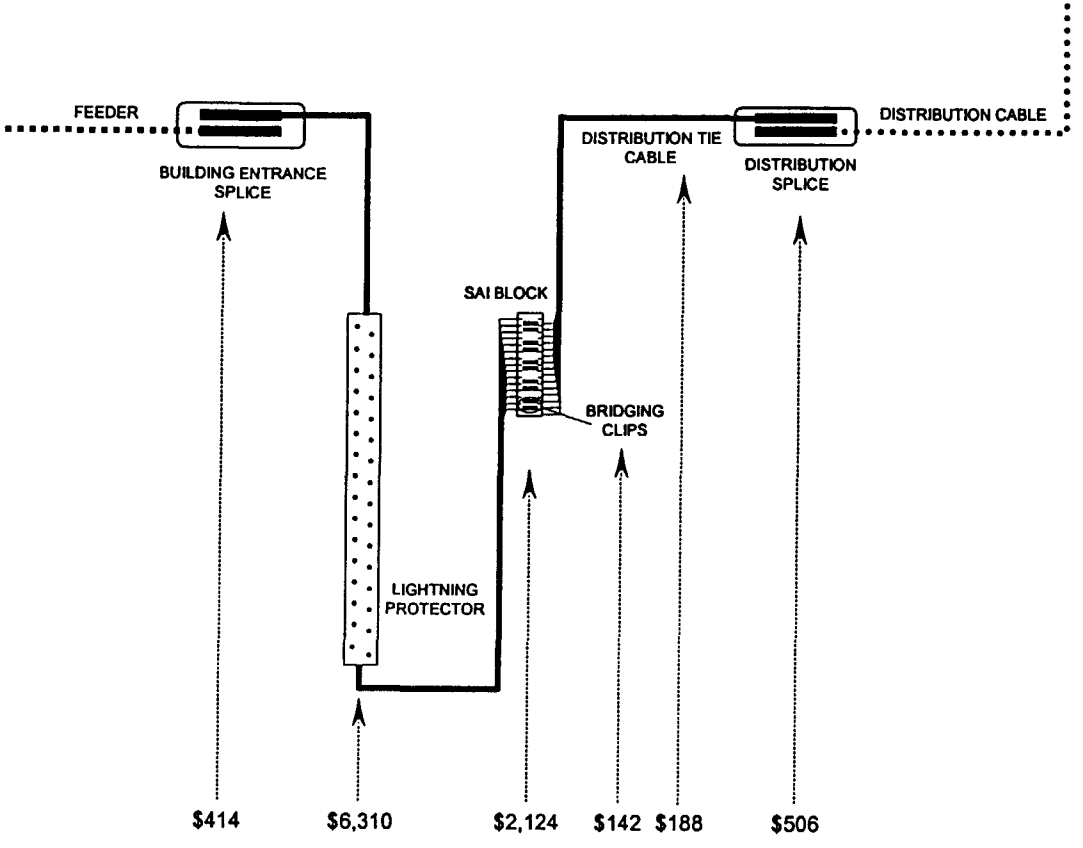
- Software and digital switching expenses
- Expense development for shared OSP structures

Sprint-Assumed Engineering



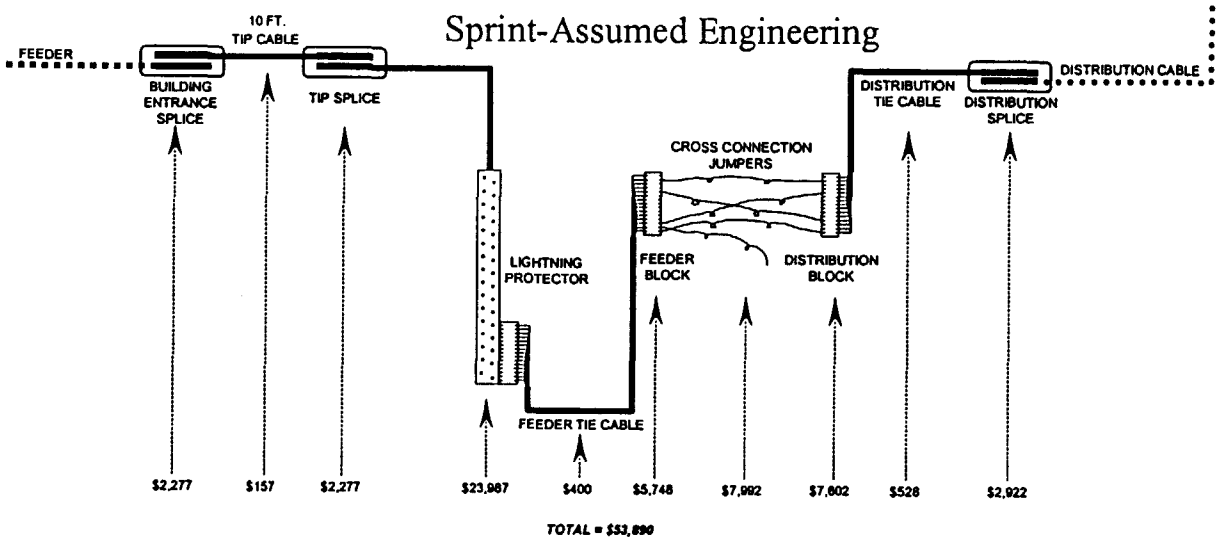
TOTAL = $53,890

HAI-Assumed Engineering



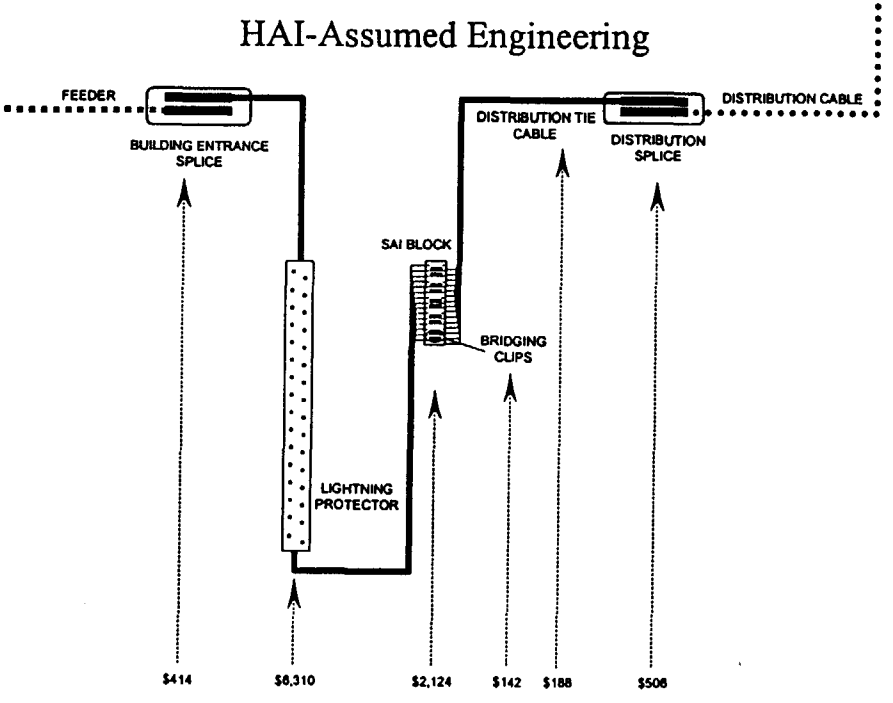
TOTAL = $9,685

Sprint-Assumed Engineering



TOTAL = $53,890

HAI-Assumed Engineering



TOTAL = $9,685

7200 Pair SAI			*SPRINT*			*AT&T / MCI WorldCom*			
Item		*Category*				*Category*			
1	Building Entrance Splice				*$2,277*				*$414*
a	Purchase 1 Splice Case	Material	1.0 ea. @	$150.22	$150.22	Material	1.0 ea. @ 50%	$150.22	$75.11
b	1 Splice Setup	Labor	2.0 hrs. @	$64.45	$128.90	Labor	2.0 hrs. @ 50%	$55.00	$55.00
c	Splice 3100 Pairs Joined	Labor	31.0 hrs. @ 100 prs./hr.	$64.45	$1,997.95	Labor	10.3 hrs. @ 300 prs./hr. x 50%	$55.00	$284.17
2	Tip Cable				*$157*				
a	Purchase 10 ft. Tip Cable	Material	10.0 ft. @	$12.518	$125.18				
b	Place 10 ft. Tip Cable	Labor	0.5 hrs. @	$64.45	$32.23				
3	Tip Splice				*$2,277*				
a	Purchase 1 Splice Case	Material	1.0 ea. @	$150.22	$150.22				
b	1 Splice Setup	Labor	2.0 hrs. @	$64.45	$128.90				
c	Splice 3100 Pairs Joined	Labor	31.0 hrs. @ 100 prs./hr.	$64.45	$1,997.95				
4	Protection				*$23,987*				*$6,310*
a	Purchase 31 ea. 100 Pair Protectors	Material	31.0 ea. @	$662.19	$20,528.00	Material	31.0 ea. @	$200.00	$6,200.00
b	Place 31 Protector Units	Labor	2.0 hrs. @	$64.45	$128.90	Labor	2.0 hrs. @	$55.00	$110.00
c	Terminate 3100 Feeder Tie Pairs	Labor	51.7 hrs. @ 60 prs./hr.	$64.45	$3,329.92	Labor			
5	Feeder Tie Cables				*$400*				
a	Place 31 ea. 100 Pair Feeder Tie Cables	Labor	6.2 hrs. @ 12 min/cable	$64.45	$399.59	Labor			
6	Place Feeder Blocks				*$5,748*				*$426*
a	Purchase 124 ea. 66M1-50 Blocks	Material	124.0 ea. @	$8.76	$1,086.24				
b	Place 124 ea. 66M1-50 Blocks	Labor	20.7 hrs. @ 10 min/block	$64.45	$1,331.97				
c	Punch Down 3100 Feeder Pairs	Labor	51.7 hrs. @ 60 prs./hr.	$64.45	$3,329.92	Labor	7.8 hrs. @ 400 prs./hr.	$55.00	$426.25
7	Place Cross Connect Jumpers				*$7,992*				*$142*
a	Place Cross-Connects	Labor	124.0 hrs. 2480 X-Conn @ 3 min. ea.	$64.45	$7,991.80	Labor	2.6 hrs. 3100 X-Conn @ 3 sec. ea	$55.00	$142.08
8	Place Distribution Blocks				*$7,602*				*$1,698*
a	Purchase 164 ea. 66M1-50 Blocks	Material	164.0 ea. @	$8.76	$1,436.64	Material	164.0 ea. @	$6.00	$984.00
b	Place 164 ea. 66M1-50 Blocks	Labor	27.3 hrs. @ 10 min/block	$64.45	$1,761.63	Labor	2.7 hrs. @ 1 min/block	$55.00	$150.33
c	Punch Down 4100 Distribution Pairs	Labor	68.3 hrs. @ 60 prs./hr.	$64.45	$4,404.08	Labor	10.3 hrs. @ 400 prs./hr.	$55.00	$563.75
9	Place Distribution Tie Cables				*$528*				*$188*
a	Place 41 ea. 100 Pair Distribution Tie Cables	Labor	8.2 hrs. @ 12 min/cable	$64.45	$528.49	Labor	3.4 hrs. @ 5 min/cable	$55.00	$187.92
10	Distribution Splice				*$2,922*				*$506*
a	Purchase 1 Splice Case	Material	1.0 ea. @	$150.22	$150.22	Material	1.0 ea. @ 50%	$150.22	$75.11
b	1 Splice Setup	Labor	2.0 hrs. @	$64.45	$128.90	Labor	2.0 hrs. @ 50%	$55.00	$55.00
c	Splice 4100 Pairs Joined	Labor	41.0 hrs. @ 100 prs./hr.	$64.45	$2,642.45	Labor	13.7 hrs. @ 300 prs./hr. x 50%	$55.00	$375.83
	Total				*$53,890*				*$9,685*

190–Type Protector

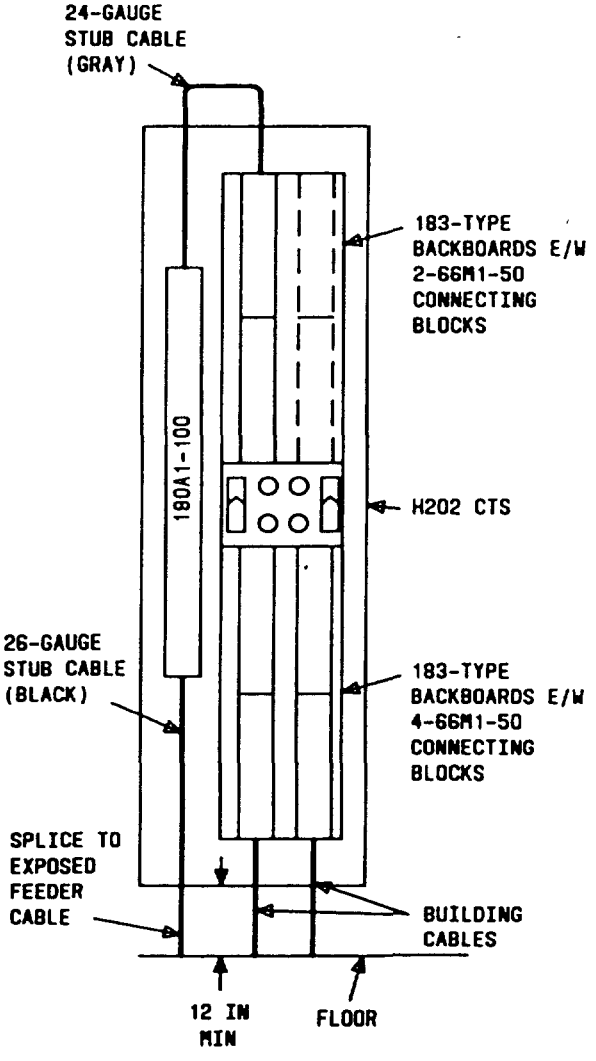
Practice 631–460–115

The 190–type protector consists of a metal housing containing a plastic connecting block with a 26–gauge "IN" stub and 24–gauge "OUT" stub. Protection is provided with 3B and 4B plug–in protector units. The 190 protector is available in 50– and 100–pair sizes as specified below.

190-TYPE PROTECTOR

PROTECTOR CODE	MAX. NO. OF PROTECTOR UNITS	DIMENSIONS (INCHES)			STUB CABLE (NOTE)			
		LENGTH	WIDTH	DEPTH	SHEATH COLOR	GAUGE	NO. OF PAIRS	LENGTH (FT)
190A1-50	50	13	4	2.75 4.40*	Black Grey	26 24	50	25
190A1-100	100	24	4	2.75 4.40*	Black Grey	26 24	100	25

* With 3B Protector Units installed.



100-PAIR
190-TYPE PROTECTOR

P.O. Box 3608
Harrisburg, PA 17105-3608
Phone: 717-564-0100
Internet: http://www.amp.com

AMP

AMP Incorporated

August 18, 1998

Mr. John Donovan
President, Telecom Visions
11 Osborne Road
Garden City, NY 11530

Dear Mr. Donovan

As requested, enclosed please find materials related to our AMP-STACK™ Modular Splicing System. Our products are designed to splice 5, 10, and 25 pair complements of standard gauge telecommunications wire.

AMP-STACK has been designed and manufactured to meet all applicable Bellcore documents, and in fact, passes or exceeds all requirements.

AMP-STACK is especially efficient when used in splicing "high-count" telecommunications cable. In fact, most Telco's mandate the use of modular connectors when cable counts exceed 300 pair. We have found that the "average" splicing technician can splice 300 pair per hour with modular connectors, and that highly skilled personnel can splice in excess of 500 pair per hour. This is certainly more efficient than splicing via "discrete" (or "single-wire") connectors.

If you would like additional samples or material, please call.

Sincerely,

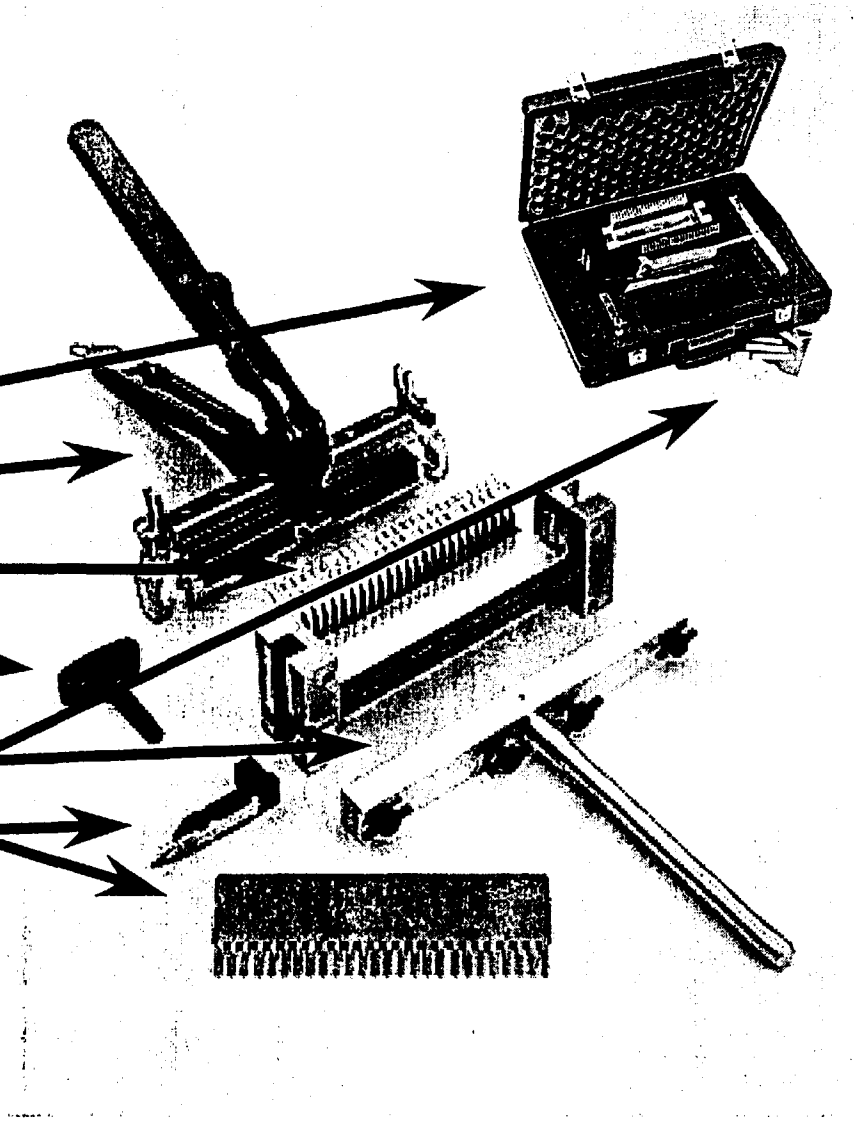
Dennis J. Thompson

U.S. Regional Sales Manager,
Global Communication Group
Phone: 717 985-2092
Fax: 717 986-7321
Internet: djthomps@amp.com

AMP STACK Mark III Application Tooling

Tooling Kit:

- ✓ **Carrying Case**
- ✓ **Hand Tool**
- ✓ **Splicing Head**
- ✓ **Single Insertion Tool**
- ✓ **Check comb**
- ✓ **T-pedestal**
- ✓ **Double Point Tester Connector**
- ✓ **Instruction Sheet.**



	Initial Common Equipment High Density DLC	Material	Labor Hrs.	Labor @ $55/hr.	
COT Common Equipment					
	SONET Firmware	$7,000			
	SONET Transceivers	$4,500			
	Multiplexer Commons	$2,000			
	Time Slot Interchanger	$3,500			
	DS-1 Shelf Commons	$500			
	DSX-1 & Cabling	$800			
COT Labor					
	Engineering		12.0	$660	
	Place Frames & Racks		3.0	$165	
	Splice DSX Metallic Cable		1.0	$55	
	Place DSX Cross Connections		0.5	$28	
	Connect Alarms, CO Timing & Power		1.0	$55	
	Place Common Plug Ins (21 ea.)		0.5	$28	
	Turn Up & Test System		3.0	$165	
RT Common Equipment					
	Cabinet	$27,500			
	SONET Transceivers	$4,500			
	Multiplexer Commons	$2,000			
	Time Slot Interchanger	$3,500			
	Channel Bank Assemblies	$4,000			
	Channel Bank Assembly Commons	$2,500			
RT Labor					
	Engineering		32.0	$1,760	
	Place Cabinet		4.0	$220	
	Copper Splicing (2hrs.+672 pairs @ 400/hr)		4.0	$220	
	Place Batteries & Turn Up Power		2.0	$110	
	Place Common Plug Ins (21 ea.)		0.5	$28	
	Turn Up & Test System		3.0	$165	
					Total
Total Initial Common Equipment - High Density DL		$62,300	66.5	$3,658	$65,958

Attachment 5

TEMPLATE FOR DETERMINING DLC COST

Item	Unit Cost	Quantity	Material Cost	Labor	Installed Cost
Remote Terminal					
Pad and Site			600	1900	2500
Remote Cabinet and Equipment:					
Cabinet / Housing			27,500	220	
Common Control Shelf Assembly					
Channel Bank Assemblies			4,000		
Fiber Splice Panel			200	300	500
Line Interface Unit					
Line Suppressor Unit					
Signal Processing Unit					
Power Shelf and Panel:					
Power Pedestal			200	300	500
Power / Rectifier Shelf and Rectifiers					
Batteries				110	
Power Distribution Panel:					
Fiber Optics Multiplexer:					
Optical Receiver Unit			4500		
Optical Transmitter Unit					
SONET Ring Formatter Unit					
Timing Control Unit			+	PLACE CONDUITS	
Terminal Control Processor			2,000	28	
System Backup Memory					
Datalink Controller and Tone Generator					
Time Slot Interchanger			3500		
Common Power Supply					
Alarm Control Unit					
Maint. And Test Interface					
System Communication Unit (TR303)					
				Copper Splicing	
Channel Bank Assembly:			2500	220	
Bank Control Unit					
Bank Power Supply					
Metallic Test Access Unit					
Ringing Generator Unit					
Channel Unit Interface-POTS					
Note number of units per card					
Engineering				1760	
TURN-UP & TEST				165	

Item	Unit Cost	Quantity	Material Cost	Labor	Installed Cost
Central Office Terminal					
Hardwired Equipment:					
Bay Assembly (specify size)				165	
Rack					
Common Control Shelf Assembly					
Full Electrical Cabling					

			Unit Cost	Quantity	Mat'l Cost	Labor	Installed Cost
	Fiber Jumpers						
	Fiber Patch Panel						
	DSX-1 Panel				800	55+28	
	Line Interface Unit						
	Line Suppressor Unit						
	Terminal Block						
	Fiber Optics Multiplexer:						
	Optical Transmitter Unit				4500		
	Optical Receiver Unit						
	SONET Ring Formatter Unit						
	Timing Control Unit						
	Terminal Control Processor				7000		
	System Backup Memory						
	Datalink Controller and Tone Generator						
	Common Cards w/ Optics				2000	28	
	Time Slot Interchanger				3500		
	Common Power Supply					55	
	Alarm Control Unit						
	Maintenance and Test Interface						
	System Communications Unit						
	Channel Bank Assembly:						
	Bank Control Unit						
	Bank Power Supply						
	DS-1 Switch Interface Unit				500		
	Number DS-1's per Card						
	Note number of RTs served by one COT.						1

Engineering 660

Turn up & Test 165

Plant Specific Expenses

- Apply E:I to post-sharing investments
  - ARMIS-based E:I reflects equivalent sharing levels in numerator and denominator
- Overstatement of cost due to non-recognition of offsetting rental revenues
- Switch E:I overstates USF software cost
  - ARMIS-based E:I disproportionately reflects RTU for non-USF functions

Hypothetic ARMIS Pole Data:		
Investment	$	100
Total Expense	$	60
Internal Maintenance Expense	$	24
Rental Expense	$	36
Rental Revenue		
From other owners	$	40
Pure renters	$	10
E:I		
Traditional E:I		0.60
Excluding Rental		0.24

Model Investment			
	Presharing	$	200
	Postsharing	$	100

Traditional E:I:			
	Presharing	$	120
	Postsharing	$	60
E:I (E excluding rental):			
	Presharing	$	48
	Postsharing	$	24

Impact of RTU Costs on Switch E:I

"Other" Expense as % of "Total" =	44%	
Assumption: RTU to total "Other"	80%	
Implied RTU % of "Total"	35%	
	Low	High
FCC E:I ratios for 6212	3.60%	6.10%
After reducing for RTU	2.33%	3.95%